Objective(s): Decreased skeletal muscle mass (SMM) known as sarcopenia has been suggested as a predictor of patients' adverse outcomes. The purpose of this study was to evaluate the association between SMM and 30-day postoperative death (POD) for patients presenting with acute limb ischemia (ALI).

Methods: Data on all patients who underwent revascularization for ALI from 2005-2014 at UPMC were included in this study. Analyses were performed only on patients who had an abdominal CT angiogram at the time of their presentation. We used a validated National Institute of Health (NIH) protocol to calculate SMM on these patients. Univariate and multivariate analyses of the association of SMM with POD was performed. For the analysis, a patient with SMM less than the median was considered sarcopenic and patients with SMM above the median were considered non-sarcopenic.

Results: 169 patients met the inclusion criteria: mean age 67.9 ±14.5, female gender 53%, Rutherford classification IIa (49.7%) and IIb (42.1%). 30-Day POD was 16%. The mean SMM was 93.37 cm²/m² (SD 30 cm²/m²); median was 88.62 cm²/m². Sarcopenic patients had a 30-day POD rate of 22%; non-sarcopenic patients were 11% (p=.049). Univariate analysis revealed that SMM was protective for POD; for every 10 unit increase in SMM, odds of POD decreases by 19%. Controlling for several predictors, SMM was independently associated with and highly protective of POD (Table; adjusting for covariates (age, congestive heart failure, Rutherford classification and preoperative Creatinine), every 10 units increase in SMM resulted in 25% decreased odds of POD (p=0.014). Multivariate analysis revealed sarcopenic patients had 4 times higher odds of POD than nonsarcopenic patients (p=0.032).

Conclusions: SMM is highly associated with POD in patients presenting in this acute setting. Patients with low SMM are at significantly higher odds of mortality. Future work should explore if additional nutritional support for patients with sarcopenia may improve their surgical outcomes.